

WHAT IS CLAIMED IS:

1. A method for providing a delay guarantee for each of a plurality of client
5 devices associated with an access point, comprising:
 classifying each of said plurality of client devices into one of a
 plurality of potential client device types;
 determining a desired traffic load for said plurality of client
 devices; and
10 allocating shaper intervals to each of said plurality of client
 devices based on client device type classification and said desired traffic
 load.
2. The method of claim 1, wherein said client device types include critical
15 compliant, critical non-compliant, non-critical satisfied, non-critical regulated,
and non-critical non-responsive.
3. The method of claim 2, wherein said allocating shaper intervals to each
of said plurality of client devices based on client device type classification and
20 said desired traffic load includes allocating a shaper interval of zero to a client
device classified as critical compliant.
4. The method of claim 3, wherein said allocating shaper intervals to each
of said plurality of client devices based on client device type classification and
25 said desired traffic load includes allocating a shaper interval of zero to a client
device classified as critical non-compliant if no traffic overload exists for said
access point.
5. The method of claim 3, wherein said allocating shaper intervals to each
30 of said plurality of client devices based on client device type classification and
said desired traffic load includes allocating a non-zero shaper interval to a client
device in said plurality of client devices classified as critical non-compliant

when a traffic overload exists for said access point and said plurality of client devices includes at least one client device classified as critical compliant.

6. The method of claim 1, further comprising:

5 disassociating at least one of said plurality of client devices from said access point if a traffic overload exists for said access point.

7. The method of claim 1, wherein said determining a desired traffic load for said plurality of client devices includes determining a maxMeanAccessTime
10 value associated with said plurality of client devices.

8. The method of claim 7, wherein said determining a desired traffic load for said plurality of client devices includes determining an access delay time for a first of said plurality of client devices

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9. The method of claim 7, wherein said determining a desired traffic load for said plurality of client devices includes determining a targetInterFrameSpace value associated with said plurality of client devices.

20 10. The method of claim 1, further comprising:

allocating bandwidth to each of said plurality of client devices.

11. The method of claim 10, wherein said allocating bandwidth to each of said plurality of client devices includes determining a target frame rate and
25 shaper interval for a first client device in said of said plurality of client devices based on a guarantee delay time associated with said first client device and a maxMeanAccessDelay value associated with said plurality of client devices.

12. The method of claim 1, further comprising:

30 determining a reference time for first client device in of said plurality of client devices based on a shaper interval associated with said first client device.

13. The method of claim 1, wherein said allocating shaper intervals to each of said plurality of client devices based on client device type classification and said desired traffic load includes allocating a shaper interval to a first client
5 device in said plurality of client devices such that said first client device's interframe interval is larger than said shaper interval.

14. The method of claim 1, further comprising:
determining a guarantee delay value for a first of said plurality of
10 client devices.

15. The method of claim 1, further comprising:
receiving a request for new bandwidth.

16. The method of claim 15, further comprising:
determining bandwidth consumption for at least some of said
15 plurality of client devices.

17. The method of claim 16, further comprising:
determining if said new bandwidth will create overload for said
20 access point.

18. The method of claim 1, wherein said access point performs said
classifying each of said plurality of client devices into one of a plurality of
25 potential client device types; said determining a desired traffic load for said plurality of client devices; and said allocating shaper intervals to each of said plurality of client devices based on client device type classification and said desired traffic load.

19. A method of determining whether a request for new bandwidth should be
30 accepted by an access point, comprising:

receiving a request for new bandwidth to be provided by an access point;

determining bandwidth consumption of accepted critical client devices and other client devices associated with said access point;

5 determining critical access delay for all of said critical client devices;

determining the total target frame rate for said access point based on said critical access delay; and

10 accepting said bandwidth requirement if said request does not cause an overload condition for said access point.

20. An article of manufacture comprising:

a computer readable medium having stored thereon instructions which, when executed by a processor, cause said processor to:

15 classify each of a plurality of client devices into one of a plurality of potential client device types;

determine a desired traffic load for said plurality of client devices; and

20 allocate shaper intervals to each of said plurality of client devices based on client device type classification and said desired traffic load.

21. An apparatus, comprising:

a processor;

25 a communication port coupled to said processor and adapted to communicate with at least one device; and

a storage device coupled to said processor and storing instructions adapted to be executed by said processor to:

classify each of a plurality of client devices into one of a plurality of potential client device types;

30 determine a desired traffic load for said plurality of client devices; and

allocate shaper intervals to each of said plurality of client devices based on client device type classification and said desired traffic load.